A PATH ROUTING AND PROVISIONING METHOD AND APPARATUS

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ABSTRACT OF THE DISCLOSURE

5   An apparatus, method and computer program product for a data communications system includes transmitting data in a transport overhead field to at least one network element, the data providing a source identifier and a destination identifier, and using the data in the transport overhead field to provide end-to-end service. One embodiment includes applying a routing protocol to read the source

10   identifier and the destination identifier to provide routing, provisioning and restoration of functions. The transport overhead field is a J1 field in a SONET communication packet according to an embodiment. The J1 field includes the source identifier and the destination identifier and provides data for the end-to-end, or path-level services. Further, the J1 field, according to an embodiment, includes additional

15   data such as one or more of transport identification data (TID), Internet Protocol (IP) addresses, Common Language Location Information (CLLI) data, and requests for bandwidth. By including the source identifier and the destination identifier, the method avoids manual point-by-point routing of STS-Ns. Another embodiment is directed applying a wavelength routing protocol to the data in the transport overhead

20   field to provide end-to-end services, the wavelength protocol locating new paths for communication. According to this embodiment, an intelligent routing software system in combination with the wavelength routing protocol determines end-to-end routing automatically. Alternatively, the wavelength protocol locates new paths for communication via a user interface.